

is always kept in contact with the said screw by the weight already mentioned acting on the driving-screw through the sector. Thus the smallest motion of the fine-threaded screw will be immediately responded to by the driving-screw, sector, and polar axis.

This fine screw is easily turned from any part of the observatory by means of cords passing over wheels on the end of a spindle connected by a pair of cog-wheels with the fine screw.

One turn of these wheels corresponds to thirty seconds of time; so, the edge of the wheel being divided, you can with the greatest ease and accuracy measure small differences of right ascension up to eight or ten minutes of time; while the motion is so smooth and reliable that you can split a star on the line almost quite as well and as certainly with the right ascension slow motion as with the micrometer-screw.

This apparatus has now been in use upwards of three years, during which it has received but little care or attention; yet I have never once, under any circumstances, been disappointed in the immediate starting, and constant rate, of the driving-machinery.

In the ordinary form of construction the reserve-power of the clock is liable to be used up in overcoming internal resistance in the machinery; whereas in the new form the entire reserve-power of the clock (which is about four times that absolutely necessary to move the instrument) is available to overcome external resistance.

In order to try the effect on the rate of a considerable resistance, I turned the telescope to P.D. = 90 and R.A. = 6 hrs.: in this position 14 lbs. attached to the telescope at a distance of 54 inches from the declination-axis did not produce a change of 10 seconds per hour in the rate; while the friction of the whole machinery is so little that, although the moving parts weigh 8 cwt. a weight of 12 lbs., descending an inch per minute, sufficed to drive the clock and all attached machinery.

Sherrington Bray, Co. Wicklow,
19 May, 1873.

On a New Method of Observing the Transits of Venus.

By Richard A. Proctor, B.A. (Cambridge).

Mr. E. L. Garbett has communicated to me his views respecting a method of observing the approaching transits of *Venus*, which appears to offer considerable advantages. I hope to obtain from him, for our Supplementary Number, a full description of the method and its characteristics. For the present it may suffice to mention that he suggests the application of photography with

special reference to the middle of the transit,—that is, that stations should be selected where at the middle of the transit *Venus* will be most displaced by parallax from and towards the Sun's centre. This differs from Dr. De La Rue's original proposition, in which stress was laid, if I remember rightly, on the determination of the distance of *Venus* at mid-transit from the Sun's centre by the comparison of photographs taken during the whole progress of the transit. What Mr. Garbett proposes is that attention should be directed solely to the determination of the distance of *Venus* from the Sun's centre at the time of mid-transit by several photographs taken during a brief interval including that epoch.

The best available station for the purpose, in a geometrical sense, would be Bouvet Isle, south and somewhat west of Cape Town. But Cape Town would be an excellent station; and I cannot but express a hope that the necessary photographic appliances for this method will be provided there, in addition to those which can be favourably applied at that station for indicating the whole progress of the latter half of the transit. As our excellent late Secretary, Mr. Stone, is in command there, we may be sure that the fullest and most satisfactory use would be made of any appliances so provided.

Note on the Discovery of Minor Planet (131).

By E. Dunkin, Esq.

The following memorandum has been drawn up at the request of the Astronomer Royal, as an illustration of the successful working of the Convention relating to cable telegrams of important astronomical discoveries recently agreed upon between the Smithsonian Institution and the Directors of the Transatlantic Cable Companies.

On 1873, May 26, the following telegram was received by the Astronomer Royal from Dr. Henry, Secretary of the Smithsonian Institution, announcing the discovery of a new planet (131):—

“Planet sixteen fourteen south twenty one eighteen, motion due west eleventh.”

These words were at once forwarded by telegraph to the Observatories of Paris, Berlin, Kiel, Vienna, and Pulkowa, and by post to the principal English Observatories.

The following communication has since been received by the Astronomer Royal from Dr. Förster, Director of the Observatory of Berlin:—

“With my best thanks for your telegraphic communication of the discovery of Planet (131), I beg to send you two observations taken at our Observatory:—